MPR 1280.4
REVISION E
EFFECTIVE DATE: October 21, 2005
EXPIRATION DATE: October 21, 2010

MARSHALL PROCEDURAL REQUIREMENTS

QD01

MSFC CORRECTIVE ACTION SYSTEM

DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
Baseline		5/14/99	Document converted from MSFC-P14.1 to a Directive. Previous history retained in system as part of canceled or superseded ISO Document files.
Revision	A	8/16/99	Changes made to incorporate new organizational terminology. Paragraph 1.4, "MWI 8730.9" changed to "MWI 1280.2" and paragraph 1.5, "MWI 8730.11" changed to "MWI 1280.4."
Revision	B	3/26/01	Replaced reference to deleted document MPG 1700.1 with MWI 8621.1; Added S&MA inform management of trends and management respond appropriately; Included Office as well as Project and Directorate; Added POC appearing at MMS Implementation Team meeting to status delinquent response.
Revision	C	1/24/03	Change footer URL; Replace "Quality Comment" with "Customer Feedback"; Change QS10-R-012" to QS-R-012"; Replace URL "http:msfcsma1/dbwebs/cas" with "https://msfcsma1.msfc.nasa.gov"
Revision	D	10/15/2004	Change from MPG to MPR, removing or clearly segregating optional suggestions from mandatory requirements; Changed URL link to CAS application; Expanded Customer Feedback screening criteria; Identify specific S&MA positions doing the work
Revision	E	10/21/2005	To address NCR 696, a mandatory Objective Evidence of Corrective Action data verification has been added for RCAR closure by corrective action to add OPR consultation while screening QSDNs for RCARs, and to specifically inform the POC of their options in ways to disposition the RCAR.

TABLE OF CONTENTS

PREFACE

P.1 PURPOSE

This Marshall Procedural Requirements (MPR) establishes the Marshall Space Flight Center (MSFC) responsibilities and requirements for Corrective Action System (CAS) activities which fall within the scope as described in Marshall Policy Directive (MPD) 1280.1, "Marshall Management Manual."

P.2 APPLICABILITY

This MPR is only applicable to problems which were identified after the baseline effective date (November 10, 1997) of MPG 1280.4, the predecessor of MPR 1280.4.

Corrective actions taken during MSFC Internal Quality Audits are addressed in MPR 1280.6, "Internal Quality Audits." Corrective actions required to correct supplier/ subcontractor discrepancies are addressed in MPR 5000.1, "Purchasing", and related instructions. Corrective actions for mishaps are addressed in MWI 8621.1, "Close Call and Mishap Reporting and Investigation Program." This document does not apply to, or preclude, those corrective action systems imposed by NASA Program direction or by contract, including the Shuttle, Payload, and Space Station Problem Reporting and Corrective Action (PRACA) flight hardware/software systems.

P.3 AUTHORITY

MPD 1280.1, "Marshall Management Manual"

P.4 APPLICABLE DOCUMENTS

a. MPD 1280.1, "Marshall Management Manual"

b. MPR 1280.6, "Internal Quality Audits"

c. MPR 5000.1, "Purchasing"

d. MPR 8730.3, "Control of Nonconforming Product"

e. MWI 1280.2, "MSFC Customer Feedback System"

f. MWI 1280.3, "Corrective/Preventive Action Notification System"

g. MWI 1280.4, "MSFC Quality System Deficiency Notice System"

h. MWI 8621.1, "Close Call and Mishap Reporting and Investigation Program"

i. QD-R-012, "S&MA (QD) Operation of the MSFC Corrective Action System"

P.5 REFERENCES

None

P.6 CANCELLATION

MPR 1280.4D dated October 15, 2004

Original signed by
Robin N. Henderson for

David A. King
Director

DOCUMENT CONTENT

1. DEFINITIONS

1.1 Corrective Action. Action taken to correct nonconformances and to eliminate the cause of nonconformances to prevent recurrence.

1.2 Corrective Action Board (CAB). Board composed of a representative of Recurrence Control Action Request (RCAR) Point of Contact's (POC's) management, a Safety and Mission Assurance (S&MA) representative and, tailored by type of RCAR involved, Project, Directorate, or Center Management personnel charged to evaluate and disposition proposed actions related to a specific RCAR.

1.3 Corrective Action System (CAS). The organization and procedures involved with implementing and coordinating the requirements of this document.

1.4 Customer Feedback. The documented result of an MSFC customer communication (e.g., complaint, observation, or compliment) regarding delivered MSFC products and services as specified by MWI 1280.2, "MSFC Customer Feedback System."

1.5 Discrepancy Record (DR). Copy 1 of MSFC Form 460.

1.6 Nonconformance. A condition of any article, material, software, service, or activity in which one or more characteristics do not conform to requirements. This includes failures, discrepancies, defects, malfunctions, and noncompliances.

1.7 Ground Support Equipment (GSE). GSE is non-flight equipment with a physical and/or functional interface with the flight hardware that is routinely required for the handling, servicing, inspection, testing, maintenance, alignment, adjustment checkout, repair, and overhaul of flight hardware.

1.8 Quality System Deficiency Notice (QSDN). Quality System nonconformances which are documented as specified by MWI 1280.4, "MSFC Quality System Deficiency Notice System."

1.9 Recurrence Control Action Request (RCAR). A request initiated by Safety and Mission Assurance (S&MA) to responsible organizations to investigate a nonconformance for the purpose of identifying the root cause and actions necessary to prevent recurrence. An RCAR is used to record the results of the investigation, justification for not taking corrective action (explanation) or actions taken to implement the corrective action to include the effectiveness. The RCAR is available for viewing at http://edocio.msfc.nasa.gov/dbwebs/apps/cas/.

1.10 Root Cause. The underlying reason for, or cause of, one or more nonconformances or deficiencies identified through investigations and studies which, when corrected, prevent occurrence or prevent or reduce recurrence.

1.11 Severity Categories for Software Problems.

Severity	Potential Effect of Failure
1	Code problem which causes loss of control, explosion, or other hazardous effect.
2	Code problem which causes inability to achieve mission objectives such as launch, mission duration, payload deployment, etc.

2. RESPONSIBILITIES

2.1 Safety and Mission Assurance Directorate CAS organization shall:

2.1.1 Ensure overall implementation of this system.

2.1.2 Evaluate all hardware/software DRs (MSFC Form 460), QSDNs, and Customer Feedbacks to determine the need for recurrence control action. Perform trend analyses on DRs to determine the need for corrective action. Initiate RCARs as required.

2.1.3 Maintain a list of appropriate Point(s) of Contact (POC) for receipt of RCARs.

2.1.4 Provide periodic reports as necessary to appropriate Center Management, Program/Project Manager or Systems Engineer, responsible directorates or offices, and S&MA representative in the project office for each project denoting the open/delinquent status of unresolved hardware/software RCARs. Provide periodic reports as necessary to appropriate management for open/delinquent status of unresolved Customer Feedbacks and quality system deficiencies RCARs. Provide periodic reports as necessary to appropriate management for response to adverse trends of open or newly opened Customer Feedbacks, discrepancy reports, and quality system deficiencies RCARs.

2.1.5 Evaluate and assess the completeness of the data provided to support the closure of the RCAR.

2.1.6 Provide administrative support for Corrective Action Board (CAB) and real-time tracking and statusing for all RCARs.

2.2 Organizational POCs as Assigned/Directorate or Office POCs/Document OPRs/Process Owners shall:

2.2.1 Resolve any S&MA problems concerning the completeness of the data provided to support the closure of the RCAR.

2.2.2 Establish appropriate milestones for flight readiness assessment of open recurrence control actions.

2.2.3 Review the monthly status report for delinquent recurrence control actions and take necessary action to expedite closure.

2.2.4 Resolve and establish analysis and recurrence control action priorities in cases where schedule and resources conflicts exist.

2.2.5 Determine the need for and perform, or coordinate the performance of, all necessary investigations to determine the root cause of the nonconformance.

2.2.6 Determine appropriate recurrence control actions.

2.2.7 When cause and/or recurrence control action cannot be determined, document appropriate rationale for closure as an explained problem and input into the MSFC CAS data base.

2.2.8 Record the required recurrence control action in the MSFC CAS data base or return it to S&MA's CAS Coordinator for data entry, to include all reports (in Adobe Acrobat [PDF] Format) and all images/photos (in JPG format).

2.2.9 Implement the required recurrence control action through established channels.

2.2.10 Perform additional investigation where close-out rationale is judged to be inadequate or insufficient.

2.2.11 Provide needed support to Corrective Action Boards.

2.3 Corrective Action Board Members shall:

2.3.1 Review RCAR packages.

2.3.2 Provide management direction and support for RCAR resolution.

2.3.3 Resolve conflicts in approaches to corrective actions.

2.3.4 Assign CAB action items.

2.3.5 Close RCARs upon verification that corrective action has been taken and that it is effective.

2.4 Center, Project/Program, and/or Directorate or Office Management shall take steps in rectifying issues regarding identified adverse trends in problem areas or lack of adequate responsiveness within their organization.

3. PROCEDURE

The three sources for initiation of corrective action/recurrence control are hardware/software nonconformances, Customer Feedbacks, and Quality System Deficiency Notices. Each process is described separately in the following sections:

3.1 RCAR Processing Initiated by MPR 8730.3, "Control of Nonconforming Product."

Actionee	Shall Perform all Actions
	3.1.1 **Screening Process**
S&MA CAS Lead	3.1.1.1 Upon receipt (hard copy or electronically via the MSFC Nonconformance data base) of a DR, S&MA CAS Lead shall screen the DR to determine if it requires the initiation of an RCAR. (Remedial action/immediate correction of the hardware/software nonconformance shall be accomplished through the DR process as described in MPR 8730.3, "Control of Nonconforming Product.")
S&MA CAS Lead	3.1.1.2 Screening of hardware/software nonconformances shall be performed by S&MA CAS Lead as follows:
S&MA CAS Lead	3.1.1.3 If the DR has been determined to require recurrence control action, S&MA CAS Lead shall initiate an RCAR using the MSFC CAS data base.
S&MA CAS Lead	3.1.1.4 S&MA CAS Lead shall, within 5 working days of the initiation of the hardware/software nonconformance, provide notification of the RCAR to the directorate or office POC, Program/Project Manager or Systems Engineer, and co-located S&MA Engineer. The notification shall also specify and explain the possible ways to deal with the RCAR: a. Closure as a Non-RCAR, explaining how no RCAR should have been generated and initiation of an RCAR only resulted from the CAS mis-applying the screening rules. b. Closure by Explanation, without action but with justification as to why no action is needed, possible, or desirable. c. Closure by Action, by making changes to remedy the situation.

Flight Hardware, Flight Software, and Ground Support Equipment which Directly Interfaces with Flight Hardware	
Problems which require corrective action	Problems which do not require corrective action
Hardware failures Severity 1 and 2 Software problems An event which could lead to a nonconformance such as contamination or corrosion An event which could lead to a nonconformance such as structural cracks or handling damage Unexplained anomaly Overstress or potential overstress of hardware Any nonconformance which has shown by S&MA CAS trend analysis to need corrective action Any problem which requires corrective action per Project Manager's direction NOTE: S&MA CAS shall coordinate with the organization involved prior to RCAR initiation if S&MA CAS trend analysis is the prime criteria prompting generation of an RCAR.	One-time use or one-of-a-kind unit that is unrelated to other flight hardware/software/ GSE A benign condition which does not have a potential effect of increasing risk or affect form, fit, or function Clearly defined and agreed-to standard repair to bring the item into specification or performance parameters already exist. NOTE: Repeated failures shall be tracked through S&MA CAS trending and elevated to RCARs when instances become frequent. No effect on flight safety, mission performance, reuse, or refurbishment

Figure 1. Corrective Action Screening Criteria

3.1.2 **Investigation**

Directorate and/or Office RCAR POC

The directorate or office POC receiving the RCAR shall respond to S&MA CAS Lead with its proposed approach within 10 working days of assignment (RCAR responses that are not provided in 10 working days from time of notification are considered delinquent unless S&MA CAS Lead is notified that an extension is required). The POC shall:

Directorate and/or

3.1.2.1 Access the online CAS data base at

Office RCAR POC

http://edocio.msfc.nasa.gov/dbwebs/apps/cas/ and determine if the problem can be closed as "corrective action not required" by using the screening criteria in Figure 1. If so, the POC shall notify S&MA CAS engineer and request closure of the RCAR. If corrective action is required, proceed to step 3.1.2.2.

Directorate and/or Office RCAR POC

3.1.2.2 Investigate and determine the root cause.

Directorate and/or Office RCAR POC

3.1.2.3 Identify proposed corrective action(s).

Directorate and/or Office RCAR POC

3.1.2.4 Record the investigation results (reports, images, and analyses), root cause, and proposed corrective action or explanation into the MSFC CAS data base.

If a problem is understood to the point that only limited or no investigation is required, and the problem is not a constraint to flight, then the problem shall be resolved by documenting the rationale as to why it is acceptable to proceed without corrective action (i.e., Explanation). All of the following data elements shall be addressed to close this problem as explained or as an unexplained anomaly.

a. Problem Clarification

b. Problem History

c. Planned Use

d. Analysis Results, Root Cause

e. Last Test Able to Detect Anomaly

f. Methods of Detecting In-Flight

g. Mission Effect

h. Explanation Rationale

i. Corrective Action for Subsequent Vehicles/

Hardware/Software (recurrence control)

Note: If any of the above mentioned elements does not apply, the POC shall enter a brief statement why it is not applicable.

Directorate and/or Office RCAR POC

3.1.2.5 Identify whether the issue is believed to be generic/systemic and provide supporting rationale.

3.1.3 **Corrective Action Implementation**

The RCAR POC shall then:

Directorates or Offices RCAR POC

3.1.3.1 Record the corrective action implementation data and objective evidence (i.e., engineering orders, revised procedures/documents, revised training records/documents, completed facility modification paper, and completed transportation/shipping changes) in the CAS data base. When changes in procedures or instructions result from corrective actions, the POC shall reference the RCAR in the document change history as the reason for the change.

Directorate and/or Office RCAR POC

3.1.3.2 Begin implementation of those corrective actions which do not require management approval.

3.1.4 **RCAR Review for Completion**

S&MA CAS Lead

3.1.4.1 Upon receipt of the completed RCAR package, S&MA CAS shall, within 10 working days, assess the completeness of the data provided to support the closure of the RCAR, including evidence of corrective action.

S&MA CAS Lead

3.1.4.2 If S&MA CAS does not concur that the RCAR package is complete, the RCAR package shall be annotated with the S&MA CAS rationale for returning the RCAR to the responsible directorate or office POC.

3.1.5 Delinquent RCAR Responses

S&MA CAS Lead

A list of delinquent RCARs shall be forwarded monthly to the appropriate directorate or office with a copy to the Director, S&MA, indicating the original date of the DR and RCAR submission and the projected closure date.

Directorate or Office Management

3.1.5.1 The directorate or office management with delinquent POC response(s) shall contact the POC(s) involved and resolve difficulties regarding timely RCAR response.

POC with Delinquent RCAR Response

3.1.5.2 The POC having a delinquent RCAR response shall be present at the Marshall Management System (MMS) Implementation Team meeting to status the RCAR.

3.1.6 Closure Process

S&MA CAS Lead

S&MA CAS shall facilitate the CAB. The CAB shall consist of the responsible Project Manager (Chair), Systems Engineer (if applicable), and S&MA project / activity representative. The CAB closure process shall be as follows:

S&MA CAS Lead

3.1.6.1 Consolidate RCAR disposition materials and notify CAB members.

CAB Members

3.1.6.2 Review RCAR disposition material prior to formal action.

CAB Members

3.1.6.3 Review and evaluate corrective action, ensuring that the root cause is identified and addressed to preclude recurrence.

CAB Members

3.1.6.4 Determine if issue is generic/systemic.

S&MA CAS Lead

3.1.6.5 If generic/systemic, initiate the process in MWI 1280.3. Otherwise, processing proceeds to the next paragraph without additional action.

CAB Members

3.1.6.6 Assign follow-up actions when necessary to ensure that planned corrective actions are taken and are effective.

S&MA CAS Lead

3.1.6.7 Record, track, and status action items assigned. S&MA CAS shall record these actions in the CAS data base.

S&MA CAS Lead — 3.1.6.8 Enter approved RCARs as closed into the MSFC CAS data base.

3.2 RCAR Processing Initiated by MWI 1280.2, "MSFC Customer Feedback System."

Actionee — Action

3.2.1 **Screening Process**

S&MA CAS Lead — 3.2.1.1 Upon receipt of Customer Feedbacks, S&MA CAS shall screen the Customer Feedbacks to determine if they require the initiation of an RCAR.

a. Hardware/software nonconformances shall be processed in accordance with MPR 8730.3 and section 3.1 of this procedure.

b. Quality system nonconformances shall be processed in accordance with section 3.3 of this procedure.

S&MA CAS Lead — 3.2.1.2 Screening of Customer Feedbacks shall be performed as follows:

Customer Feedbacks which require Corrective Action	Customer Feedbacks which do not require Corrective Action
Non-Hardware/Software and Non-Quality System Complaints: • Considered Significant • Potentially Impacting Quality of the Product or Service • Initiated by external customers • Requiring multiple MSFC organizations to resolve	Compliments Internal complaints of a non-critical nature that can be resolved within a single organization

Figure 2. Customer Feedback Screening Criteria

S&MA CAS Lead — 3.2.1.3 If the Customer Feedback has been determined to require recurrence control under this section, S&MA CAS shall initiate an RCAR using the CAS data base.

S&MA CAS Lead — 3.2.1.4 S&MA CAS shall, within 5 working days of the receipt of the Customer Feedback, provide notification of the RCAR to the responsible organization(s). The notification shall also specify and explain the possible

ways to deal with the RCAR:

a. Closure as a Non-RCAR, explaining how no RCAR should have been generated and initiation of an RCAR only resulted from the CAS mis-applying the screening rules
b. Closure by Explanation, without action but with justification as to why no action is needed, possible, or desirable
c. Closure by Action, by making changes to remedy the situation.

3.2.2 **Investigation**

Assigned Organizational RCAR POC

The MSFC organizational POC receiving the RCAR shall respond to S&MA CAS with its proposed approach within 10 working days of assignment (RCAR responses that are not provided in 10 working days from time of notification shall be considered delinquent unless S&MA CAS is notified that an extension is required). The organizational RCAR POC shall:

Assigned Organizational RCAR POC

3.2.2.1 Access the on-line CAS data base at http://edocio.msfc.nasa.gov/dbwebs/apps/cas/ and determine if the problem can be closed as "corrective action not required" by using the screening criteria in Figure 2. If so, the POC shall notify S&MA CAS and request closure of the RCAR, with process flow proceeding to step 3.2.4. If corrective action is required, processing flow shall proceed to step 3.2.2.2.

Assigned Organizational RCAR POC

3.2.2.2 Investigate and determine the root cause.

Assigned Organizational RCAR POC

3.2.2.3 Identify proposed corrective action(s).

Assigned Organizational RCAR POC

3.2.2.4 Record the investigation results (reports, images, and analyses), root cause, and proposed corrective action or explanation into the CAS data base.

If a problem is understood to the point that only limited or no investigation is required, then the problem shall be resolved by documenting the rationale as to why it is acceptable to proceed without corrective action. All of

the following data elements shall be addressed to close this problem as explained or as an unexplained anomaly.

a. Problem Clarification

b. Problem History

c. Planned Use

d. Analysis Results, Root Cause

e. Explanation Rationale

Assigned Organizational RCAR POC

3.2.2.5 Identify whether the issue is believed to be generic/systemic and provide supporting rationale.

3.2.3 **Corrective Action Implementation**

The RCAR POC shall then:

Assigned Organizational RCAR POC

3.2.3.1 Record the corrective action implementation data and objective evidence (i.e., engineering orders, revised procedures/documents, revised training records/documents, completed facility modification paper, and/or completed transportation/shipping changes) in the CAS data base. If changes in procedures or instructions result from corrective actions, the POC shall reference the RCAR in the document change history as the reason for the change.

Assigned Organizational RCAR POC

3.2.3.2 Begin implementation of those corrective actions which do not require management approval.

3.2.4 **RCAR Review for Completion**

S&MA CAS Lead

3.2.4.1 Upon receipt of the completed RCAR package, S&MA CAS shall, within 10 working days, assess the completeness of the data provided to support the closure of the RCAR, including evidence of corrective action.

Assigned Organizational RCAR POC

3.2.4.2 If S&MA CAS does not concur that the RCAR package is complete, the RCAR package shall be annotated with the S&MA CAS rationale for returning the RCAR to the assigned organizational RCAR POC.

3.2.5 **Delinquent RCAR Responses**

S&MA CAS Lead	A list of delinquent RCARs shall be forwarded monthly by S&MA CAS to the involved directorate, office, or MMS document OPR management, with a copy to the Director, S&MA, indicating the original date of the Customer Feedback and RCAR submission and the projected closure date.
Directorate, Office, or MMS Document OPR Management	3.2.5.1 The directorate, office, or MMS document OPR management with delinquent POC response(s) within their organization shall contact the POC(s) involved and resolve difficulties regarding timely RCAR response.
RCAR POC with Delinquent RCAR Response	3.2.5.2 The RCAR POC having a delinquent RCAR response shall be present at the MMS Implementation Team meeting to status the RCAR.

3.2.6 Closure Process

S&MA CAS Lead	S&MA CAS shall facilitate the CAB. The CAB shall consist of the MMS Management Representative (Chair), the Assigned Organization Management, and S&MA project or activity representative. The CAB closure process shall be as follows:
S&MA CAS Lead	3.2.6.1 Consolidates RCAR disposition materials and notifies CAB members.
CAB Members	3.2.6.2 Review RCAR disposition materials prior to formal action.
CAB Members	3.2.6.3 Review and evaluate corrective action, ensuring that the root cause is identified and addressed to preclude recurrence.
CAB Members	3.2.6.4 Determine if issue is generic/systemic.
S&MA CAS Lead	3.2.6.5 If generic/systemic, initiates the process in MWI 1280.3. Otherwise, processing proceeds to the next paragraph without additional action.
CAB Members	3.2.6.6 Assign follow-up actions when necessary to ensure that planned corrective actions are taken and are effective.
S&MA CAS Lead	3.2.6.7 Records, tracks, and statuses action items assigned. S&MA CAS shall record these actions in the CAS data base.

S&MA CAS Lead — 3.2.6.8 Enters approved RCARs as closed into the CAS data base.

3.3 RCAR Processing Initiated by MWI 1280.4, "MSFC Quality System Deficiency Notice System."

Actionee — Action

3.3.1 **Screening Process**

S&MA CAS Lead — 3.3.1.1 Upon receipt (hard copy or electronically) of QSDNs, S&MA CAS shall screen the quality system deficiencies in consultation with the OPR of the primary documentation involved to determine if they require the initiation of an RCAR.

S&MA CAS Lead — 3.3.1.2 Screening of quality system deficiency notices shall be performed as follows:

S&MA CAS Lead — 3.3.1.3 If the quality system deficiency has been determined to require recurrence control action, S&MA CAS shall initiate an RCAR using the MSFC CAS data base.

S&MA CAS Lead — 3.3.1.4 S&MA CAS shall, within 5 working days of the initiation of the quality system deficiency notice, provide notification of the RCAR to the responsible quality system document OPR or process owner. The notification shall also specify and explain the possible ways to deal with the RCAR:

a. Closure as a Non-RCAR, explaining how no RCAR should have been generated and initiation of an RCAR only resulted from the CAS mis-applying the screening rules
b. Closure by Explanation, without action but with justification as to why no action is needed, possible, or desirable
c. Closure by Action, by making changes to remedy the situation.

Quality System Deficiencies which require Corrective Action	Quality System Deficiencies which do not require Corrective Action
Nonconformances against the MMM, MPRs, MWIs, and other documentation applicable to the Levels 1-3 MMS	Minor problems with Quality System Procedures:

documents for which the following apply: • Document violates the ISO 9001 or AS9100 Standards • Document contains overlapping or inconsistent requirements with other documents • Policy, procedure, instruction, or applicable document is not or cannot be performed as specified • Statutory or regulatory requirements need to be considered or implemented into the document Nonconformances against OIs that are potentially generic in nature. Generic or systemic problem identified by Internal Audits.	• Spelling • Wording Nonconformances against Organizational Issuances (OI) that are unique to an instruction and do not have generic applicability.

Figure 3. Quality System Deficiency Notice Screening Criteria

3.3.2 **Investigation**

Assigned RCAR POC Document OPR/Process Owner

The document OPR/process owner receiving the RCAR shall respond to S&MA with proposed approach within 10 working days of assignment (RCAR responses that are not provided in 10 working days from time of notification shall be considered delinquent unless S&MA CAS is notified that an extension is required). The assigned RCAR POC document OPR/process owner shall:

Assigned RCAR POC Document OPR/Process Owner

3.3.2.1 Access the on-line CAS data base at http://edocio.msfc.nasa.gov/dbwebs/apps/cas/ and determine if the problem can be closed as "corrective action not required" by using the screening criteria in Figure 3. If so, the actionee shall notify S&MA CAS and request closure of the RCAR, with processing flow proceeding to step 3.3.4. If corrective action is required, processing flow shall proceed to step 3.3.2.2.

Assigned RCAR POC Document OPR/Process Owner

3.3.2.2 Investigate and determine the root cause.

Assigned RCAR POC Document OPR/Process Owner

3.3.2.3 Identify proposed corrective action(s).

Assigned RCAR POC Document OPR/Process Owner

3.3.2.4 Record the investigation results (reports, images, and analyses), root cause and proposed corrective action or explanation into the CAS data base.

If a problem is understood to the point that only limited or no investigation is required, then the problem shall be resolved by documenting the rationale as to why it is acceptable to proceed without corrective action. All of the following data elements shall be addressed to close this problem as explained:

a. Problem Clarification

b. Problem History

c. Analysis Results, Root Cause

d. Explanation Rationale

3.3.3 **Corrective Action Implementation**

The RCAR POC shall then:

Assigned RCAR POC Document OPR/Process Owner

3.3.3.1 Record the corrective action implementation data and objective evidence (i.e., engineering orders, revised procedures/ documents, revised training records/documents, completed facility modification paper, and/or completed transportation/shipping changes) in the CAS data base. If changes in policy, procedures, instructions, or any documents applicable to MMS documentation result from corrective actions, the RCAR POC shall reference in the document history log or equivalent as the reason for the change.

Assigned RCAR POC Document OPR/Process Owner

3.3.3.2 Begin implementation of those corrective actions which do not require management approval.

3.3.4 **RCAR Review for Completion**

S&MA CAS Lead

3.3.4.1 Upon receipt of the completed RCAR package, S&MA CAS shall, within 10 working days, assess the

completeness of the data provided to support the closure of the RCAR, including evidence of corrective action.

S&MA CAS Lead

3.3.4.2 If S&MA CAS does not concur that the RCAR package is complete, the RCAR package shall be annotated with the S&MA CAS rationale for returning the RCAR to the assigned RCAR POC document OPR/process owner.

3.3.5 **Delinquent RCAR Responses**

S&MA CAS Lead

A list of delinquent RCARs shall be forwarded monthly by S&MA CAS to the MMS Management Representative, with a copy to the Director, S&MA, indicating the original date of the QSDN and RCAR submission and the projected closure date.

MMS Management Representative

3.3.5.1 The MMS Management Representative shall contact the POC(s) involved and resolve difficulties regarding timely RCAR response.

Assigned RCAR POC with Delinquent RCAR Response

3.3.5.2 The POC having a delinquent RCAR response shall be present at the MMS Implementation Team meeting to status the RCAR.

3.3.6 **Closure Process**

S&MA CAS Lead

S&MA CAS shall facilitate the CAB. The CAB shall consist of the MMS Management Representative (Chair), assigned RCAR POC responsible document OPR/process owner Management, and S&MA project or activity representative. The CAB closure process shall be as follows:

S&MA CAS Lead

3.3.6.1 Coordinates RCAR disposition and notifies CAB members.

CAB Members

3.3.6.2 Review RCAR disposition materials prior to formal action.

CAB Members

3.3.6.3 Review and concur with corrective action, ensuring that the root cause is identified and addressed to preclude recurrence.

CAB Members

3.3.6.4 Assign follow-up actions when necessary to ensure that planned corrective actions are taken and are effective.

S&MA CAS

3.3.6.5 Records, tracks, and statuses action items assigned.

Lead		S&MA CAS shall record any such actions in the CAS data base.
S&MA CAS Lead	3.3.6.6	Enters approved RCARs as closed into the CAS Database.

4. RECORDS

4.1 Corrective Action System (CAS) reports, including CAS Recurrence Control Action Requests (RCARs), Discrepancy Reports (DRs), Customer Feedbacks (CFs), and Quality System Deficiency Notices (QSDNs) shall be maintained by the CAS Lead for seven years and then destroyed, in accordance with NRRS 1/26.5/A [1280]. Electronic information shall be maintained in the CAS database on the provided server. Any source paper documents shall be maintained by the CAS Lead. Electronic files shall be maintained in the CAS data system.

4.2 CAS Corrective Action Board (CAB) decisions, directives, and/or action items shall be maintained by the CAS lead for seven years and then destroyed, in accordance with NRRS 1/26.5/A [1280]. Electronic information shall be maintained in the CAS database on the provided server. Any source paper documents shall be maintained by the CAS Lead. Electronic files shall be maintained in the CAS data system.

4.3 The Corrective Action System database of electronic files shall be handled as permanent by the CAS Lead for the life of the Corrective Action System (CAS) as an unscheduled item, per NRRS Schedule 2 Agency Filing Scheme number 2400.

5. FLOW DIAGRAM